

CLAIMS:

1. A transformer comprising:

- a bar-shaped ferrite core;
- an inner winding placed directly around said ferrite core, said inner winding being an electrically insulated flat wire having a rectangular cross section and being wound intimately around said ferrite core with a length of the rectangular cross section extending perpendicular to an axis of said ferrite core;
- an outer winding wound over said inner winding;
- a dielectric shield made of a molding material, said dielectric shield being molded over said outer winding, said inner winding, and said ferrite core for sealing the same inside of said shield;
- a pair of output terminals connected across said inner winding and exposed on said dielectric shield; and
- a pair of input terminals connected across said outer winding and exposed on said dielectric shield;
- wherein said outer winding has its circumference covered by a dielectric sheath,
- wherein said outer winding has an intermediate winding portion between its winding start end and its winding stop end, said dielectric sheath in said intermediate winding portion being spaced from each other along the axis of said ferrite core to leave a gap thereat, said gap being filled with said molding material.

2. The transformer as set forth in claim 1, wherein one turn of said outer winding is spaced along the axis of said ferrite core from the adjacent turns of said outer winding by a distance of 10 μm or more within said intermediate winding portion.
3. The transformer as set forth in claim 1, wherein each of said winding start end and said winding stop end includes two or more close turns of said outer winding.
4. The transformer as set forth in claim 1, wherein said outer winding is secured on said inner winding by means of an adhesive layer formed on said inner winding.
5. The transformer as set forth in claim 4, wherein said adhesive layer comprises a heat-sealing agent.
6. The transformer as set forth in claim 4, wherein said outer winding is secured to said inner winding by means of a heat-sealing layer covering at least one of said outer winding and said inner winding.
7. The transformer as set forth in claim 1, wherein one turn of said outer winding has its portion spaced outwardly from the periphery of said inner winding.
8. The transformer as set forth in claim 1, wherein

a dielectric spacer is disposed around the circumference of said inner winding to space said outer winding from said inner winding.

9. The transformer as set forth in claim 8, wherein said dielectric spacer is formed with a guide groove determining the winding direction of said outer winding.

10. The transformer as set forth in claim 8, wherein said dielectric spacer is provided with a means for retaining the ends of said inner winding around said ferrite core.

11. The transformer as set forth in claim 1, wherein a fixture is attached to said ferrite core for fixing the ends of said inner winding around said ferrite core.

12. The transformer as set forth in claim 11, wherein said fixture is a cap made of a dielectric resin which has an opening larger than the end face of said ferrite core, a plurality of projections projecting from the periphery of said opening into said opening to come into abutment against the periphery of the end of said ferrite core for fixing said cap to said ferrite core.

13. The transformer as set forth in claim 11, wherein said cap is shaped into a resilient plate and is formed around said opening with a slit for elastically varying the size of said opening.

14. The transformer as set forth in claim 12, wherein said cap is formed with a notch at which the ends of said outer winding are captured.

15. The transformer as set forth in claim 12, wherein said cap is embedded in said dielectric shield.

16. The transformer as set forth in claim 11, wherein said fixture comprises a pair of caps and coupling arms for coupling said caps, said inner winding being held between said caps.

17. The transformer as set forth in claim 16, wherein said ferrite core has a cross-section surrounded by two parallel straight lines and two arcuate curves, said coupling arms extending in an axial direction of said ferrite core outside of said arcuate curves.

18. The transformer as set forth in claim 16, wherein said coupling arm is formed with guide grooves for determining the winding direction of said outer winding.

19. The transformer as set forth in claim 16, wherein said coupling arm is formed with a notch which holds the ends of said outer winding.

20. The transformer as set forth in claim 16, wherein

said coupling arm is formed with terminal lugs around which the ends of said outer winding are wound to be held thereat.

21. The transformer as set forth in claim 16, wherein said coupling arm is formed with terminal lugs around which the ends of said inner winding are wound to be held thereat.

22. The transformer as set forth in claim 11, wherein said fixture is fit into grooves formed in the end of said ferrite core so as to be secured thereto.

23. The transformer as set forth in claim 22, wherein said fixture is made of a magnetic material.

24. The transformer as set forth in claim 22, wherein said fixture is provided with a terminal lug for retaining the end of said inner winding.

25. The transformer as set forth in claim 22, wherein said fixture is made of an electrically conductive material.

26. The transformer as set forth in claim 11, wherein said fixture comprises a retainer holding the end of said inner winding and a leg inserted between said ferrite core and said inner winding wound around said ferrite core.

27. The transformer as set forth in claim 26, wherein said ferrite core is formed in its end with a recess for receiving said leg.
28. The transformer as set forth in claim 26, wherein said leg has an inclined surface which bears thereon said inner winding, said inclined surface being configured to give a radial distance from the periphery of said ferrite core which is greater towards the center of said ferrite core than at the one end of said core where said leg is attached.
29. The transformer as set forth in claim 11, wherein said fixture is provided with terminal lugs that hold the inner winding extending out from the periphery of said ferrite core.
30. The transformer as set forth in claim 26, wherein said fixture is provided with terminal lugs that hold the inner winding extending out from the periphery of said ferrite core.
31. The transformer as set forth in claim 11, wherein said fixture is a dielectric member retaining electrically conductive terminal lugs which are electrically connected with said inner winding in an electrically insulating relation with said ferrite core.
32. The transformer as set forth in claim 31, wherein said fixture includes a plurality of legs which are inserted between said ferrite

core and said inner winding at a plurality of spots around the end of said ferrite core.

33. The transformer as set forth in claim 1, wherein said ferrite core is formed at a portion adjacent its axial end with notches so as to form flanges between the respective notches and the end face of said ferrite core, said inner winding having its end wound around said notches as being pressed against said flanges so as to fix the end of said inner winding around the ferrite core.

34. The transformer as set forth in claim 33, wherein said notch has a bottom of which depth is greater towards the end face of said ferrite core.